Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the current application.

Listing of Claims

Claim 1 (currently amended): A compound of the formula I:

or a pharmaceutically acceptable salt, hydrate, solvate, or a mixture thereof, wherein

- (a) each occurrence of Z is independently CH₂, CH=CH, or phenyl, where each occurrence of m is independently an integer ranging from 1 to 9, but when Z is phenyl then m is 1;
- (b) G is $(CH_2)_x$ where x is 1-7, $CH_2H=CHCH_2$. CH=CH, CH_2 -pheny- CH_2 , or phenyl;
- (c) W^1 and W^2 are independently L, V, $C(R^1)(R^2)$ - $(CH_2)_c$ - $C(R^3)(R^4)$ - $(CH_2)_n$ -Y, or $C(R^1)(R^2)$ - $(CH_2)_c$ -V where c is 1 or 2 and n is an integer ranging from 0 to 7;
- each occurrence of R^1 or R^2 is independently $(C_1\text{-}C_6)$ alkyl, $(C_2\text{-}C_6)$ alkenyl, $(C_2\text{-}C_6)$ alkynyl, phenyl, or benzyl or when one or both of W^1 and W^2 is $C(R^1)(R^2)\text{-}(CH_2)_{c^2}$ $C(R^3)(R^4)\text{-}(CH_2)_{n^2}$ Y, then R^1 and R^2 can both be H to form a methylene group; or R^1 and R^2 and the carbon to which they are both attached are taken together to form a $(C_3\text{-}C_7)$ cycloakyl group;
- (e) R³ is H, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₁-C₆)alkoxyl, phenyl, benzyl, Cl, Br, CN, NO₂, or CF₃;
- (f) R⁴ is OH, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₁-C₆)alkoxyl, phenyl, benzyl, Cl, Br, CN, NO₂, or CF₃;
- (g) L is $C(R^1)(R^2)$ - $(CH_2)_n$ -Y, wherein n is an integer from 1 to 5 0 to 5;

(h) V is:

(i) each occurrence of Y is independently (C₁-C₆)alkyl, OH, COOH, COOR⁵, SO₃H,

wherein:

- (i) R^5 is (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, phenyl, or benzyl and is unsubstituted or substituted with one or more halo, OH, (C_1-C_6) alkoxy, or phenyl groups,
- (ii) each occurrence of R^6 is independently H, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, or (C_2-C_6) alkynyl and is unsubstituted or substituted with one or two halo, OH, (C_1-C_6) alkoxy, or phenyl groups;
- (iii) each occurrence of R^7 is independently H, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, or (C_2-C_6) alkynyl; and
- (j) X is $(CH_2)_z$ or Ph, wherein z is an integer from 0 to 4.

Claim 2 (original): The compound of claim 1, wherein G is (CH₂)₂.

Claim 3 (original): The compound of claim 1, wherein each occurrence of Z_m is independently (CH₂) and m is 1-4.

Claim 4 (original): The compound of claim 1, wherein each occurrence of W^1 and W^2 is independently L.

Claim 5 (original): The compound of claim 2, wherein L is C(CH₃)₂-(CH₂)-OH.

Claim 6 (currently amended): The compound of claim 1, wherein each occurrence of W^1 and W^2 is independently \underline{V} [[v]].

Claim 7 (original): The compound of claim 6, wherein V is

Claim 8 (previously amended): A compound of the formula II:

or a pharmaceutically acceptable salt, hydrate, solvate, or a mixture thereof, wherein:

- (a) each occurrence of Z is independently CH₂ or CH=CH, wherein each occurrence of m is independently an integer ranging from 1 to 9;
- (b) Q is $(CH_2)_x$, $CH_2CH=CHCH_2$, or CH=CH, where x is 2, 3, or 4;
- (c) W^1 and W^2 are independently L, V, or $C(R^1)(R^2)$ - $(CH_2)_c$ -V, where c is 1 or 2;
- (d) each occurrence of R^1 and R^2 is independently (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, phenyl, benzyl, or R^1 and R^2 and the carbon to which they are both attached are taken together to form a (C_3-C_7) cycloalkyl group;
- (e) L is $C(R^1)(R^2)$ - $(CH_2)_n$ -Y, where n is an integer ranging from 0 to 5;
- (f) V is:

(g) each occurrence of Y is independently (C₁-C₆)alkyl, OH, COOH, COOR³, SO₃H,

wherein:

- (i) R^3 is (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, phenyl, or benzyl and is unsubstituted or substituted with one or more halo, OH, (C_1-C_6) alkoxy, or phenyl groups,
- (ii) each occurrence of R^4 is independently H, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, or (C_2-C_6) alkynyl and is unsubstituted or substituted with one or two halo, OH, (C_1-C_6) alkoxy, or phenyl groups; and
- (iii) each occurrence of R^5 is independently H, $(C_1\text{-}C_6)$ alkyl, $(C_2\text{-}C_6)$ alkenyl, or $(C_2\text{-}C_6)$ alkynyl; and
- (h) $X ext{ is } (CH_2)_z ext{ or Ph, wherein z is an integer from 0 to 4.}$

Claim 9 (original): The compound of claim 8, wherein each occurrence of W^1 and W^2 is independently L.

Claim 10 (original): The compound of claim 9, wherein L is C(CH₃)₂-(CH₂)_n-Y.

Claim 11 (original): The compound of claim 10, wherein each occurrence of Y is independently OH, COOR⁷, or COOH.

Claim 12 (previously amended): The compound of claim 8, wherein Q is CH=CH.

Claim 13 (original): The compound of claim 8, wherein Z_m is CH_2 and m is 1-3.

Claim 14 (original): The compound of claim 8, wherein each of W_1 and W_2 is independently $C(R^1)(R^2)$ -(CH_2)-V.

Claim 15 (original): The compound of claim 14, wherein R^1 and R^2 are each independently (C_1-C_6) alkyl.

Claim 16 (original): The compound of claim 15, wherein R¹ and R² are each methyl.

Claim 17 (original): A compound of the formula III

or a pharmaceutically acceptable salt, hydrate, solvate, or a mixture thereof, wherein:

- (a) each occurrence of m is independently an integer ranging from 1 to 9;
- (b) $r ext{ is } 2, 3, ext{ or } 4;$
- (c) each occurrence of n is independently an integer ranging from 0 to 7;
- each occurrence of R^1 , R^2 , R^{11} , and R^{12} is independently $(C_1\text{-}C_6)$ alkyl, $(C_2\text{-}C_6)$ alkenyl, $(C_2\text{-}C_6)$ alkynyl, phenyl, benzyl, or R^1 and R^2 and the carbon to which they are both attached are taken together to form a $(C_3\text{-}C_7)$ cycloalkyl group, or R^{11} and R^{12} and the carbon to which they are both attached are taken together to form a $(C_3\text{-}C_7)$ cycloalkyl group; and

(e) each occurrence of Y is independently (C₁-C₆)alkyl, OH, COOH, COOR³, SO³H,

wherein:

- (i) R³ is (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, phenyl, or benzyl and is unsubstituted or substituted with one or more halo, OH, (C₁-C₆)alkoxy, or phenyl groups,
- (ii) each occurrence of R⁴ is independently H, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, or
 (C₂-C₆)alkynyl and is unsubstituted or substituted with one or two halo, OH,
 (C₁-C₆)alkoxy, or phenyl groups;
- (iii) each occurrence of R^5 is independently H, $(C_1\text{-}C_6)$ alkyl, $(C_2\text{-}C_6)$ alkenyl, or $(C_2\text{-}C_6)$ alkynyl; and
- (f) X is $(CH_2)_z$ or Ph, wherein z is an integer from 0 to 4.

Claim 18 (original): The compound of claim 17, wherein each occurrence of Y^1 and Y^2 is independently OH, COOR³, or COOH.

Claim 19 (original): A compound of the formula IV

or a pharmaceutically acceptable salt, hydrate, solvate, or a mixture thereof, wherein:

- (a) each occurrence of m is an independent integer ranging from 1 to 9;
- (b) x is 2, 3, or 4;
- (c) each of V^1 and V^2 is independently:

Claim 20 (original): A compound of the formula V:

or a pharmaceutically acceptable salt, hydrate, solvate, or a mixture thereof, wherein:

- each occurrence of Z is independently CH₂, CH=CH, or phenyl, where each occurrence of m is independently an integer ranging from 1 to 5, but when Z is phenyl then its associated m is 1;
- (b) G is $(CH_2)_x$, $CH_2CH=CHCH_2$, CH=CH, CH_2 -phenyl- CH_2 , or phenyl, where x is an integer ranging from 1 to 7;
- (c) W^1 and W^2 are independently $C(R^8)(R^9)$ - $(CH_2)_n$ -Y, where n is an integer ranging from 0 to 7;

- (d) each occurrence of R^8 and R^9 is independently H, (C_1-C_6) alkyl, (C_2-C_6) alkynyl, phenyl, or benzyl or R^8 and R^9 can be taken together to form a carbonyl group;
- (e) each occurrence of R^1 and R^2 is independently H, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, phenyl, or benzyl or R^1 and R^2 can be taken together to form a carbonyl group or R^1 and R^2 and the carbon to which they are both attached are taken together to form a (C_3-C_7) cycloalkyl group;
- (f) each occurrence of R^6 and R^7 is independently H, (C_1-C_6) alkyl, or R^6 and R^7 can be taken together to form a carbonyl group or R^6 and R^7 and the carbon to which they are both attached are taken together to form a (C_3-C_7) cycloalkyl group;
- (g) Y is independently (C₁-C₆)alkyl, OH, COOH, COOR³, SO₃H,

wherein:

- (i) R³ is (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, phenyl, or benzyl and is unsubstituted or substituted with one or more halo, OH, (C₁-C₆)alkoxy, or phenyl groups,
- (ii) each occurrence of R^4 is independently H, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, or (C_2-C_6) alkynyl and is unsubstituted or substituted with one or two halo, OH, (C_1-C_6) alkoxy, or phenyl groups;
- (iii) each occurrence of R^5 is independently H, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, or (C_2-C_6) alkynyl;
- (h) each occurrence of b is independently 0 or 1 or optionally the presence of one or more additional carbon-carbon bonds that when present complete one or more carbon-carbon double bonds; and
- (i) X is $(CH_2)_z$ or Ph, wherein z is an integer from 0 to 4.

Claim 21 (original): The compound of claim 20, wherein each occurrence of W^1 and W^2 is an independent $C(R^1)(R^2)$ - $(CH_2)_n$ -Y group and each occurrence of Y is independently OH, $COOR^3$, or COOH.

Claim 22 (original): A compound of the formula VI:

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or a pharmaceutically acceptable salt, hydrate, solvate, or a mixture thereof, wherein

- (a) each occurrence of m is independently an integer ranging from 1 to 5;
- (b) X is $(CH_2)_z$ or Ph, wherein z is an integer from 0 to 4;
- (c) W^1 and W^2 are independently $C(R^1)(R^2)$ - $(CH_2)_n$ -Y, where n is an integer ranging from 0 to 7;

(d) each occurrence of R^1 or R^2 is independently (C_1 - C_6)alkyl, (C_2 - C_6)alkynyl, or R^1 and R^2 and the carbon to which they are both attached are taken together to form a (C_3 - C_7)cycloalkyl group;

(e) Y is (C_1-C_6) alkyl, $(CH_2)_nOH$, $(CH_2)_nCOOH$, $(CH_2)_nCOOR^3$, SO_3H ,

wherein:

(i) R^3 is (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, phenyl, or benzyl and is unsubstituted or substituted with one or more halo, OH, (C_1-C_6) alkoxy, or phenyl groups,

- (ii) each occurrence of R⁴ is independently H, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, or (C₂-C₆)alkynyl and is unsubstituted or substituted with one or two halo, OH, (C₁-C₆)alkoxy, or phenyl groups;
- (iii) each occurrence of R⁵ is independently H, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, or (C₂-C₆)alkynyl;
- (f) each occurrence of b is independently 0 or 1; and
- (g) X is $(CH_2)_z$ or Ph, wherein z is an integer from 0 to 4.

Claim 23 (previously amended): The compound of claim 22, wherein each occurrence of W^1 and W^2 is independently $C(R^1)(R^2)$ - $(CH_2)_n$ -Y and each occurrence of Y is independently OH, $COOR^3$, or COOH.

Claim 24 (previously amended): A compound of structure:

6,9-Dihydroxy-2,2,13,13-tetramethyl-tetradecanedioic acid;

2,2,13,13-Tetramethyl-tetradecane-1,6,9,14-tetraol;

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6,10-Dihydroxy-2,2,14,14-tetramethyl-pentadecanedioic acid; and

2,2,14,14-Tetramethyl-pentadecane-1,6,10,15-tetraol.

or a pharmaceutically acceptable salt, hydrate, or solvate thereof.

Claim 25 (original): A pharmaceutical composition comprising a compound of claim 1, 8, 17, 19, 20, 22, or 24 and a pharmaceutically acceptable vehicle, excipient, or diluent.

Claim 26 (original): A pharmaceutical composition comprising a compound of claim 1, 8, 17, 19, 20, 22, or 24 and further comprising a second therapeutic agent.

Claim 27 (currently amended): A method for treating or preventing aging, Alzheimer's Disease, cancer, cardiovascular disease, diabetic nephropathy, diabetic retinopathy, a disorder of glucose metabolism, dyslipidemia, dyslipoproteinemia, hypertension, impotence, inflammation, insulin resistance, lipid elimination in bile, obesity, oxysterol elimination in bile, pancreatitis, pancreatitius, Parkinson's disease, a peroxisome proliferator activated receptor-associated disorder, phospholipid elimination in bile, renal disease, septicemia, Syndrome X, thrombotic disorder, modulating C reactive protein, or enhancing bile production in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically prophyleutrally effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 28 (original): A method for treating or preventing cardiovascular disease in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 29 (original): A method for treating or preventing a dyslipidemia in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 30 (original): A method for treating or preventing a dyslipoproteinemia in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 31 (original): A method for treating or preventing a disorder of glucose metabolism in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 32 (original): A method for treating or preventing a Alzheimer's disease in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 33 (original): A method for treating or preventing Syndrome X in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 34 (original): A method for treating or preventing a septicemia in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 35 (original): A method for treating or preventing a thrombotic disorder in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 36 (original): A method for treating or preventing a peroxisome proliferator activated receptor associated disorder in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 37 (original): A method for treating or preventing obesity in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 38 (original): A method for treating or preventing pancreatitis in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 39 (original): A method for treating or preventing hypertension in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 40 (original): A method for treating or preventing renal disease in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 41 (original): A method for treating or preventing cancer in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 42 (original): A method for treating or preventing inflammation in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 43 (original): A method for treating or preventing impotence in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 44 (original): A method for treating or preventing a neurodegenerative disease or disorder in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 45 (original): A method of inhibiting hepatic fatty acid synthesis in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 46 (original): A method of inhibiting sterol synthesis in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 47 (original): A method of treating or preventing metabolic syndrome disorders in a patient, comprising administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 48 (original): A method of treating or preventing a disease or disorder that is capable of being treated by increasing HDL levels, which comprises administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 49 (original): A method of treating or preventing a disease or disorder that is capable of being treated by lowering LDL levels, which comprises administering to a patient in need of such treatment or prevention a therapeutically or prophylactically effective amount of a compound of claim 1, 8, 17, 19, 20, 22, or 24.

Claim 50 (original): A pharmaceutical composition comprising a compound of claim 1, 8, 17, 19, 20, 22, 24, or 26 and a pharmaceutically acceptable vehicle, excipient, or diluent which is administered in combination with a statin.

Claim 51 (original): A compound according to claim 1 wherein said compound has the structure:

6,9-Dihydroxy-2,2,13,13-tetramethyl-tetradecanedioic acid;

or a pharmaceutically acceptable salt, hydrate, or solvate thereof.

Claim 52 (original): A compound according to claim 1 wherein said compound has the structure:

2,2,13,13-Tetramethyl-tetradecane-1,6,9,14-tetraol;

or a pharmaceutically acceptable salt, hydrate, or solvate thereof.

Claim 53 (original): A compound according to claim 1 wherein said compound has the structure:

6,10-Dihydroxy-2,2,14,14-tetramethyl-pentadecanedioic acid;

or a pharmaceutically acceptable salt, hydrate, or solvate thereof.

Claim 54 (original): A compound according to claim 1 wherein said compound has the structure:

2,2,14,14-Tetramethyl-pentadecane-1,6,10,15-tetraol.;

or a pharmaceutically acceptable salt, hydrate, or solvate thereof.